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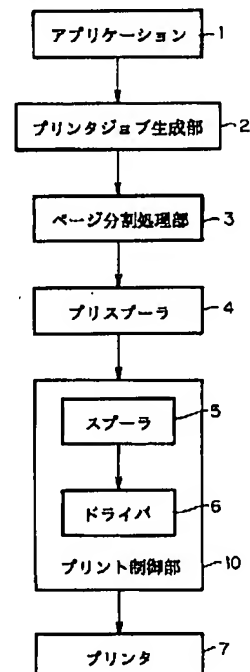
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(54) 【発明の名称】 プリント方法及び該プリント方法を実施するプリンタ及び記憶媒体

(57) 【要約】

【課題】 プリントの際に、容易にプリントジョブのプロセスをページ単位に管理することを可能とし、ページ単位にプリントの途中にプリントの方法やプリントの順番を変更することで、効率的かつ使用者の要求に応じたプリントをする。

【解決手段】 プリント要求が入ってきた時に、複数ページのプリント要求のプリントジョブである時は、ページ毎のプリント要求のプリントジョブに分割され、ページ単位でプリント処理される。したがって、複数ページのプリント要求の場合には、ページ毎のプリントジョブがスプールされ、ページ単位でプリント処理される。プリントジョブは各ドライバと一体になったスプーラへ渡される前に、プリースプーラに一時的に格納される。この構成によって、プリントジョブがスプーラに渡される前にプリント処理するドライバが選択(変更)可能になっている。



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Notes:

1. Untranslatable words are replaced with asterisks (****).
2. Texts in the figures are not translated and shown as it is.

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Dictionary: Last updated 07/20/2007 / Priority: 1. Electronic engineering / 2. Information communication technology (ICT) / 3. Mathematics/Physics

FULL CONTENTS

[Claim(s)]

[Claim 1] The print method characterized by dividing and printing the printer job of a print request on the printer job of the print request for every page.

[Claim 2] The print method characterized by assigning and printing a printing processing processor for every page of a manuscript in the printer of Claim 1.

[Claim 3] The print method characterized by specifying and printing the printer printed by a page unit in the printer of Claim 1.

[Claim 4] The print method characterized by stopping or stopping and printing the manuscript under print by a page unit in the printer of Claim 1.

[Claim 5] The print method characterized by giving priority to and printing the print of a black-and-white page in the printer of Claim 1.

[Claim 6] The print method characterized by giving priority to and printing the print of the manuscript with which the print for every manuscript is not made in the printer of Claim 1.

[Claim 7] The print method characterized by specifying a manuscript and a print page arbitrarily and printing the object to print by a page unit in the printer of Claim 1.

[Claim 8] The printer which can enforce the print method of any 1 of Claims 1-7.

[Claim 9] The storage which recorded the program which realizes the print method of any 1 of Claims 1-7 on a computer.

[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the storage which recorded PURAPUROGURAMU which realizes the print and this print method for enforcing the print

method and this print method on a computer. Image information is applicable to the printer driver software carried in a computer in particular about print scheduling of a printer which carries out printed documentation.

[0002]

[Description of the Prior Art] Usually, a printer is spooled per printer job and printed. That is, a printer job to print is saved per printer job to a spool file, sequential operation of the print data of a printer job is carried out with a printer driver, and it is printed by a printer. When it is a two or more pages print request, printing processing of the two or more pages demand is carried out as one printer job. That is, when there is a two or more pages print request, all the print data supports the printer job by two or more pages, and it is collectively printed by all of two or more pages.

[0003] Drawing 6 is the figure showing the example of a method of the conventional print request, and if it is made by dialogic operation on display devices, such as CRT, specification of a printer name and page specification can be performed and the input directions of the printer execution button are carried out as a print request is shown in drawing 6, printing processing will usually start. Therefore, it was not easy to suspend a print for every page, to stop, or to assign a separate printer and a printing processing processor to a two or more pages print request, by such a conventional printer. Moreover, when there were two or more print requests, another printer job had been that a certain printer job is printing to the waiting for a print, and unless it stopped the printing processing of the printer job under print on the way, another printer job was not able to be printed. Since the print data transmitted to the driver from the spooler will be written in a memory and processing will be advanced if processing starts by the driver or a controller, when carrying out another print, it is because all the data will be eliminated.

[0004] Therefore, unless the printer job (it is the job of two or more copies depending on the case) of a long page usually stops a print on the way by the driver or a controller as it is during printing processing. Since it will be monopolized by the printer, unless long time and its printer job were after being kept waiting long time, they were not able to do the print of the other printer job. That is, another print is not made to give priority to and print during a print, or a print is stopped temporarily and flexible print scheduling (by page unit) of resuming the print of a page with which the print is not made cannot be performed. Moreover, since in a continuation page print it would be collectively processed by the continuation page once printing processing is started, the print order of the continuation page had the problem of being unable to perform intermediate change.

[0005] Although what is necessary is just to carry out the print request of all the prints by the page unit to it as shown in drawing 7, as for carrying out a print request over much pagination, efficiency will fall remarkably. In the case of drawing 7, if input support of the print request

confirmation button is carried out at the time of two or more page printing, a printing demand will be analyzed, the printing demand screen for every page will be displayed, and change of a printer name will be made by dialogic operation on display devices, such as CRT. If a check is ended and the input directions of the print execution button are carried out on the original demand screen, printing processing will start. If there is little pagination of a print request, it will be satisfactory practically, but the efficiency to specify gets remarkably bad when large.

[0006] [moreover, a printer system given in JP,H8-244289,A] [the print spooler holding the print data which is the candidate for a print generated by the application program] Hold the process information of the page unit of print data, and [the run time of a print] A printer driver outputs to a printer the raster image generated by the page unit based on the print data held at the print spooler, and makes it possible to manage the process of a printer job to a page unit. Since a printer job is not a page unit in the case of such a printer system, management of the printing processing of a page unit is complicated, and since a spooler is a thing corresponding to a printer, it is difficult to change a printer, once print data is held at a spooler.

[0007]

[Problem to be solved by the invention] This invention was made in view of the actual condition like ****, and in the case of a print It makes it possible to manage the process of a printer job to a page unit easily, and is made efficient and for the purpose of carrying out the print according to a demand of a user by changing the method of a print, and the turn of a print into a page unit in the middle of a print.

[0008]

[Means for solving problem] Even if it is a two or more pages print request by dividing and printing a printer job on the printer job of the print request for every page, it is made to carry out print control of the invention of Claim 1 as a mutually-independent printer job for every page.

[0009] Invention of Claim 2 is made to carry out an efficient print by assigning a printing processing processor for every page of a manuscript.

[0010] Invention of Claim 3 is printed by the printer which suited the contents of a manuscript for every page, or is made to carry out the print according to a demand of a user, such as changing a printer on the way, by specifying the printer printed by a page unit.

[0011] Invention of Claim 4 suspends a print in the middle of a print, and change the order of a print by a page unit, a print is stopped on the way, or it is made to carry out the print according to a demand of a user by stopping or suspending the manuscript under print by a page unit.

[0012] Invention of Claim 5 is printing quickly what can print a print quickly by giving priority to and printing the print of a black-and-white page. A short printing demand of printing time is printed early, latency time from a print request to print-out is lessened, and it is made to carry out the efficient print according to a demand of a user.

[0013] Invention of Claim 6 is made to carry out an efficient print which lessens latency time from the print request according to a demand of a user to print-out by giving priority to and printing the print of the manuscript with which the print for every manuscript is not made.

[0014] Invention of Claim 7 is made to carry out the print according to a demand of a user by specifying a manuscript and a print page for the object to print arbitrarily by a page unit.

[0015] Invention of Claim 8 offers the printer which realizes the print method according to claim 1 to 7.

[0016] Invention of Claim 9 offers the storage which realizes the print method according to claim 1 to 7 and in which computer reading is possible.

[0017]

[Mode for carrying out the invention] In the printer system concerning this invention, since it is characterized by being spooled to the page unit of a manuscript as a printer job (Claim 1), it becomes possible to print independently of a page unit or to suspend a print (Claim 4).

Moreover, it becomes possible to change print turn into the page unit of a manuscript on the way. Assign a printing processing processor to a page unit, the printer printed on (Claim 2) and a page unit is assigned, or it becomes possible to carry out scheduling of a print to (Claim 3) and a page unit. In scheduling of a print, give priority to the print of a black-and-white page, or (Claim 5), The function (Claim 7) which gives priority to and prints the print of the manuscript with which the print for every manuscript is not made (Claim 6) to specify a manuscript and a print page for the object to print arbitrarily by a page unit is given.

[0018] Drawing 1 is a figure for explaining the example of composition of the print process concerning this invention, and each block has the following functions.

- Application 1 : generate the printer job which is a candidate for a print. After setting up print conditions as shown in drawing 6 , it has the function which carries out a print request to a printer job, for example, the printer job consists of a two or more pages print request.

- Printer job generation section 2 : generate a printer job. For example, the printer job consists of drawing commands. In the case of Windows95, a drawing command is the GDI command.

[0019] - Page split application section 3 : to the printer job of a page, it divides into the printer job for every page, and has two or more functions to transmit the generated printer job to a spooler. In the case of the printer job which consists of a drawing command, it divides per drawing processing for every page by analyzing a drawing command. In this example, it has the function transmitted to PURISUPURA.

- PURISUPURA 4 : a printer job is stored, it has the function transmitted to a spooler, and transmission processing is carried out based on a schedule.

[0020] - Spooler 5 : a printer job is stored and it has the function to transmit a printer job to a driver one by one. There is the feature of this invention in a spooler always being passed the printer job of a page unit.

- Driver 6 : it has the function which processes the printer job passed from a spooler and is changed into the data which can be printed. In addition, the print control section 10 consists of a spooler 5 and a driver 6.

- Printer 7 : it has the function to print.

[0021] When a print request enters and the difference from the conventional printer system is the printer job of a two or more pages print request, it is divided into the printer job of the print request for every page, and the feature is in the place by which printing processing can be carried out by a page unit. Therefore, in the case of a two or more pages print request, the printer job for every page is spooled, and printing processing is carried out by a page unit.

[0022] In the example of composition of drawing 1 , before a printer job is passed to the spooler which was united with each driver, it is temporarily stored in PURISUPURA. By this composition, before a printer job is passed to a spooler, the selection (change) of the driver who carries out printing processing is attained (Claim 3). Of course, page split application of the printer job may be carried out, and it may be passed to a direct spooler.

[0023] Drawing 2 is a figure for explaining the example of print request processing of this invention, receives a print request from :(S1) application, and generates the printer job based on a print request in the printer job generation section.

: (S2) A printer job is divided for every page.

: (S3) A printer job (it consists of print request data for every page) is transmitted to a spooler.

: (S4) It receives per printer job with a spooler, and printing processing of the printer job is passed and carried out to a printer driver one by one per printer job.

: (S5) Printing processing is completed.

[0024] In addition, the conventional example of print request processing is as follows.

- Receive a print request from application and generate the printer job based on a print request in the printer job generation section.

- Transmit a printer job (it consists of print request data) to a spooler.

- Pass and carry out printing processing of the printer job to a printer driver one by one per printer job in a spooler.

- Complete printing processing.

[0025] Drawing 3 is the figure showing the example of composition of a print process with two or more print processors (Claim 2). Two or more (at the example shown in drawing 3 , it is two of 101,102) print processes are assigned to a **** and each for a spooler 5 and six driver opposite 10, and the feature is in the place where each is processed independently. The driver by whom the target printer job is processed by PURISUPURA 4 is decided. Since the number of them is one, a printer 7 is the print control section 101 or 102, and print data once it was processed by the buffer 11 with the driver is stored, and it is printed one by one. Here, corresponding to each driver, you may have the printer 7.

[0026] [the example of printer job control information (Claim 3 - Claim 7) and drawing 6 which drawing 5 requires for this invention] In the figure showing the example of realization of the function which carries out supervisory control of the print situation (Claim 3 - Claim 7), printer job control information consists of that distinction, priority, and printer name which are a manuscript, a page, a printing processing situation, a monochrome print request, or a color-print demand, as shown in drawing 4 . About a printing processing situation, it is written in by investigating the information on a printer job by a method as shown in drawing 5 . Drawing 5 supervises the printer job stored during the print at PURISUPURA at the printer job information Monitoring Department, and shows the example of a realization method of the function which a printer job controls by changing a state on the way. Printer job control information investigates print request information, and a default value is decided, for example, the contents are corrected by a dialog.

[0027]

[Effect of the Invention] (1) [having the function to divide a printer job into the printer job of the print request for every page] Even if it is the print request of two or more pages, print control can be carried out as a mutually-independent printer job for every page. In the case of a print, it can make it possible easily to manage the process of a printer job for every page, and efficient and the print according to a demand of a user can be carried out by changing the method of a print, and the turn of a print into a page unit in the middle of a print (Claim 1).

[0028] (2) It is controllable by having the function which assigns a printing processing processor for every page of a manuscript to carry out an efficient print (Claim 2).

[0029] (3) By having the function to specify the printer printed by a page unit, it can print by the printer which suited the contents of a manuscript for every page, or it can print so that it may wish according to a demand of a user, such as changing a printer on the way, (Claim 3).

[0030] (4) By having the function to stop or suspend the manuscript under print by a page unit, it can print so that a print stop may be carried out in the middle of a print and it may wish by a page unit, corresponding to a demand of a user in stopping a print on the way **** [and] (Claim 4). [changing the order of a print]

[0031] (5) [having the function which gives priority to and prints the print of a black-and-white page] It is controllable by printing quickly what can print a print quickly to print a short printing demand of printing time early, to lessen latency time from a print request to print-out, and to carry out the efficient print according to a demand of a user (Claim 5).

[0032] (6) It is controllable by having the function which gives priority to and prints the print of the manuscript with which the print for every manuscript is not made to carry out an efficient print which lessens latency time from the print request according to a demand of a user to print-out (Claim 6).

[0033] (7) It can print so that an object to print may be desired by specifying a manuscript and

a print page arbitrarily and having them by a page unit according to a demand of a user (Claim 7).

[Brief Description of the Drawings]

[Drawing 1] It is the figure showing the example of composition of the print process concerning this invention.

[Drawing 2] It is the figure showing the example of print request processing concerning this invention.

[Drawing 3] It is the figure showing the example of composition of a print process with two or more print processors.

[Drawing 4] It is the figure showing the example of printer job control information concerning this invention.

[Drawing 5] It is the figure showing the example of realization of the function which carries out supervisory control of the print situation concerning this invention.

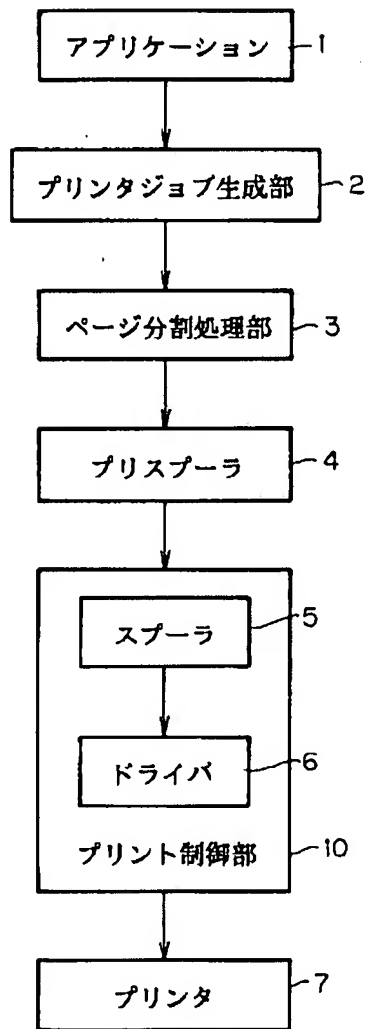
[Drawing 6] It is the figure showing the example of a method of the conventional print request.

[Drawing 7] It is the figure showing another example of the print request concerning this invention.

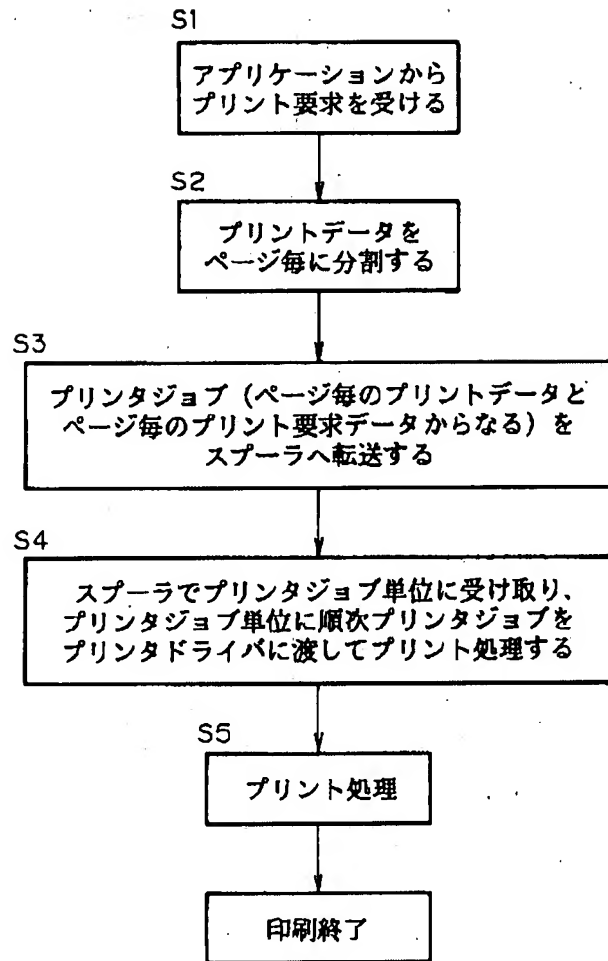
[Explanations of letters or numerals]

1 [-- PURISUPURA, 5 / -- A spooler, 6 / -- A driver, 7 / -- A printer, 10,101,102 / -- A print control section, 11 / -- Buffer.] -- Application, 2 -- The printer job generation section, 3 -- The page split application section, 4

[Drawing 1]



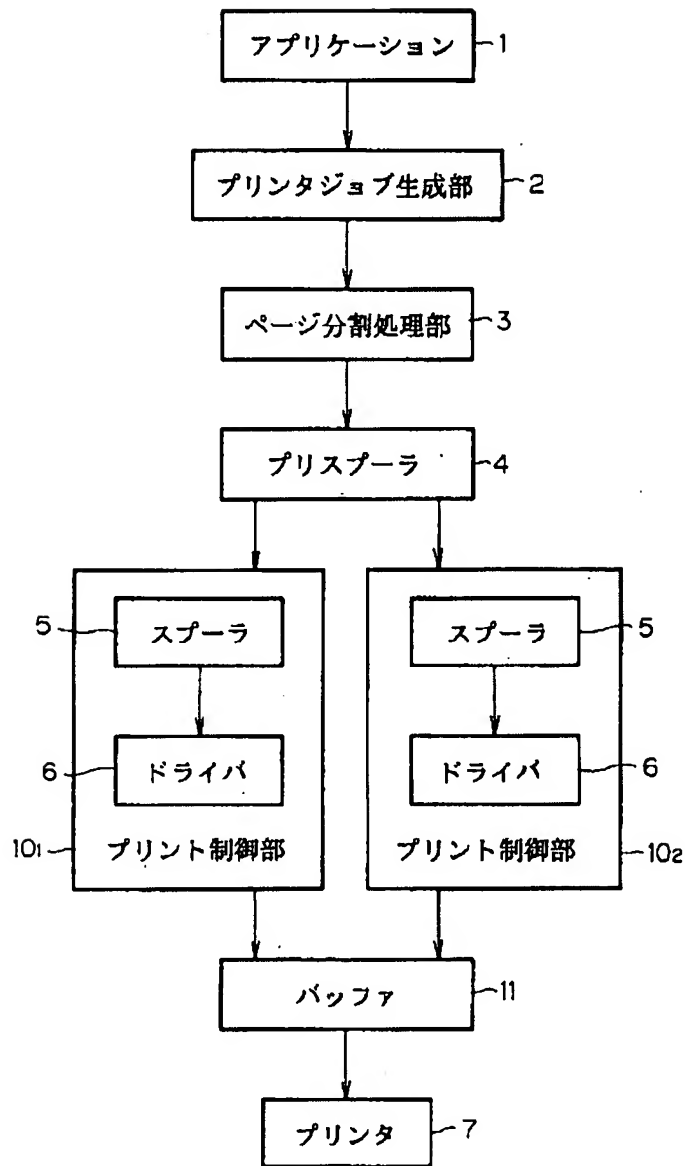
[Drawing 2]



[Drawing 6]

プリンタ名:
リコープリンタ A
ページ: 1 - 3
プリント

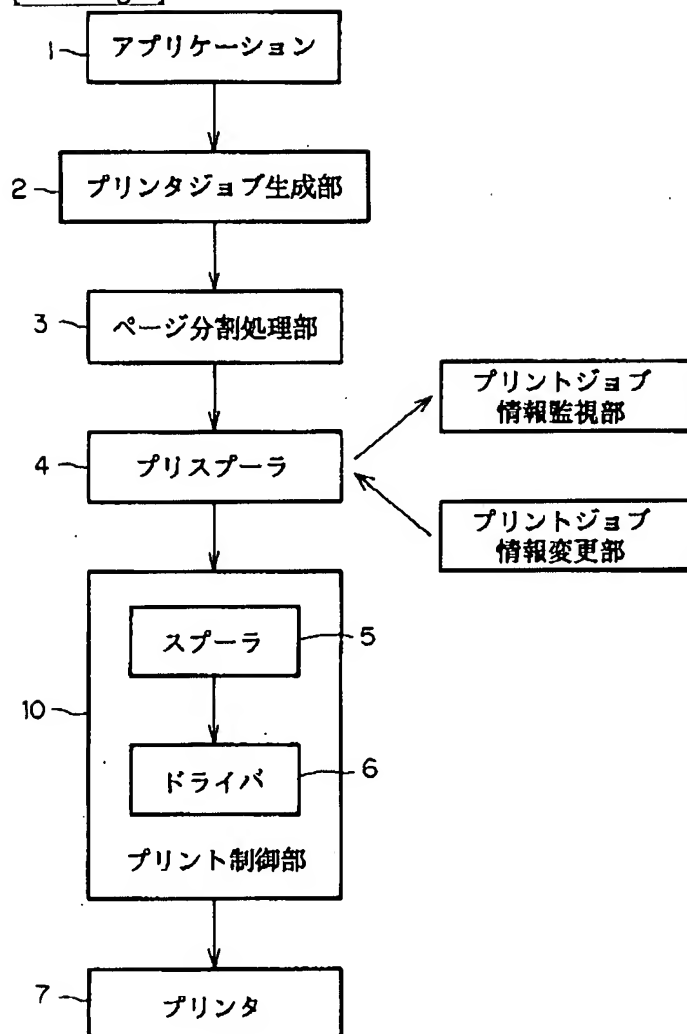
[Drawing 3]



[Drawing 4]

原稿	原稿A					原稿B		原稿C		
ページ	1	2	3	4	5	1	2	1	2	3
プリント状態	済み	処理中	未	未	未	未	未	未	未	未
モノクロ/カラー	カラー	カラー	カラー	カラー	カラー	モノクロ	モノクロ	カラー	カラー	カラー
優先度	低	低	低	低	低	中	中	高	高	高
プリンタ名	A	A	A	B	B	C	C	A	A	A

[Drawing 5]



[Drawing 7]

Default printer name: リコープリンタ A

Page: 1 - 4

OK Cancel Print

Printer Name	Page Range
リコープリンタ A	1 - 1
リコープリンタ B	2 - 2
リコープリンタ A	3 - 3
リコープリンタ B	4 - 4

OK

[Translation done.]